What is claimed is:

1. An aberration correction element, comprising:

a retardation member selectively varying a phase difference of an incoming light beam according to the polarization of the incoming light beam.

2. The aberration correction element recited in claim 1, wherein the retardation member comprises

a first retardation member comprising a stepped convex pattern with a plurality of steps at one side; and

a second retardation member combined with the first retardation member and comprising a stepped concave pattern with a plurality of steps at one side facing the first retardation member, the stepped concave pattern corresponding to the stepped convex pattern.

3. The aberration correction element recited in claim 2, wherein the first retardation member and the second retardation member comprise different refractive indices for an incident light beam, which allows the first and the second retardation members to selectively create the phase difference of the incoming light beam.

4. An aberration correction element, comprising:

a first retardation member comprising a stepped convex pattern with a plurality of steps at one side; and

a second retardation member combined with the first retardation member and comprising a stepped concave pattern with a plurality of steps at one side facing the first retardation member , the stepped concave pattern corresponding to the stepped convex pattern,

wherein the first retardation member and the second retardation member comprise different refractive indices for an incident light beam, which allows the first and the second retardation members to selectively create a phase difference of the incident light beam according to a polarization of the incident light beam.

5. An aberration correction element, comprising:

a first retardation member comprising a stepped convex pattern with a plurality of steps at one side; and

a second retardation member combined with the first retardation member and comprising a stepped concave pattern with a plurality of steps at one side facing the first retardation member, the stepped concave pattern corresponding to the stepped convex pattern, wherein the first retardation member and the second retardation member comprise

different refractive indices for a first light beam allowing the first and the second retardation members to selectively create a phase difference of the first light beam according to a polarization of the first light beam, and

a substantially equal refractive index for a second light beam perpendicular to the first light beam.

6. The aberration correction element of claim 5, wherein a pitch in the optical axis's direction of each of the plurality of steps of the first and the second retardation members is an integer multiple of 0/(n0a-n0b), wherein 0 is a wavelength of the first light beam, and n0a and n0b are the refractive indices of the first and the second retardation members, respectively, for the wavelength 0.

7. The aberration correction element of claim 5, wherein the first and the second retardation members are formed of an anisotropic material.

8. The aberration correction element of claim 6, wherein the phase difference by the first and the second retardation members according to a wavelength variation of the first light beam from the wavelength 0 to 1 of the first light beam is expressed as ((n1a-n1b) z(h)), wherein n1a and n1b are the refractive indices of the first and the second retardation members, respectively, for a wavelength 1, and h is a distance from an optical axis, and z(h) is a height from a light receiving surface of the first retardation member or the second retardation member to a particular step of the first retardation member or the second retardation member at the distance h, and the phase difference is opposite to an aberration caused by wavelength variation.

9. The aberration correction element of claim 8, wherein the stepped convex pattern and the stepped concave pattern are concentric around the optical axis, and the phase difference caused by the first and the second retardation members according to the first light beam comprises the wavelength 1 increasing or decreasing with respect to distance from the optical axis.

10. The aberration correction element of claim 8, wherein the second retardation member comprises a plurality of stepped concave patterns, such that the stepped convex pattern of the first retardation member are fitted to the stepped concave pattern of the second retardation member.

11. An optical pickup for a recording/reproduction system comprising a recording medium, the optical pickup comprising:

a first light source emitting a first light beam comprising a wavelength suitable for the recording medium;

a second light source emitting a second light beam perpendicular to the first light beam;

an objective lens focusing the first light beam to form a light spot on the recording medium;

an optical path changing unit arranged on an optical path between the first light source and the objective lens, altering a traveling path of the first light beam;

a first retardation member;

a second retardation member combined with the first retardation member, wherein the first retardation member and the second retardation member comprise different refractive indices for the first light beam;

a first aberration correction element arranged on the optical path between the optical path changing unit and the objective lens to correct chromatic aberration caused by a wavelength variation of the first light beam, wherein the first aberration correction element comprises the first retardation member and the second retardation member; and

a photodetector receiving the first light beam through the objective lens and the optical path changing unit after the first light beam is reflected from the recording medium,

wherein a phase difference caused by the first and the second retardation members according to a wavelength variation of the first light beam increases or decreases with respect to distance from an optical axis between the first light source and the recording medium.

12. The optical pickup of claim 11, wherein

the first and second retardation members of the first aberration correction member are combined with each other, and the first retardation member comprises a stepped convex pattern comprising a plurality of steps concentric around the optical axis, and

the second retardation member comprises a stepped concave pattern facing the stepped convex pattern ,

the stepped concave pattern corresponds to the stepped convex pattern , and

a phase difference caused by the first and the second retardation members increases or decreases with respect to distance from the optical axis.

13. The optical pickup of claim 12, wherein a pitch in the optical axis direction of each of the plurality of steps of the first and the second retardation members is an integer multiple of 0/(n0a-n0b), wherein 0 is a wavelength of the first light beam for which the objective lens is designed, and n0a and n0b are the refractive indices of the first and the second retardation members, respectively, for the wavelength 0.

14. The optical pickup of claim 12, wherein when the phase difference according to a wavelength variation of the first light beam from the wavelength 0 to a wavelength 1 is expressed as ((n1a-n1b) z(h)), wherein n1a and n1b are the refractive indices of the first and the second retardation members for the wavelength 1, and h is a distance from the optical axis, and z(h) is, respectively a height from a light receiving surface of the first retardation member or the second retardation member to a particular step of the first retardation member or the second retardation member at the distance h, and the phase difference is opposite to an aberration caused by the wavelength variation.

15. The optical pickup of claim 13, wherein when the phase difference according to a wavelength variation of the first light beam from the wavelength 0 to a wavelength 1

is expressed as ((n1a-n1b) z(h)), wherein n1a and n1b are the refractive indices of the first and the second retardation members for the wavelength 1, and h is a distance from the optical axis, and z(h) is, respectively, a height from a light receiving surface of the first retardation member of the second retardation member to a particular step of the first retardation member or the second retardation member at the distance h, and the phase difference is opposite to an aberration caused by the wavelength variation.

16. The optical pickup of claim 11, wherein beam perpendicular to the first polarization of the first light beam,] the second light beam comprises a relatively long wavelength low-density recording medium.

17. The optical pickup of claim 16, further comprising a second aberration correction member arranged on the optical path between the optical path changing unit and the objective lens, to selectively create a phase difference of an incident light beam according to the polarization of the incident light beam, wherein the second aberration correction member comprises a third retardation member with at least two stepped convex patterns each of which comprise a plurality of steps and a fourth retardation member with at least two stepped concave patterns corresponding to the stepped convex patterns, to correct chromatic aberration caused by a wavelength variation according to the second light beam and/or spherical aberration caused by a substrate thickness variation according to the low-density recording medium .

18. The optical pickup of claim 17, wherein a pitch in the optical axis direction of each of the plurality of steps of the third and the fourth retardation members is not an integer multiple of 0 (n0a -n0b), wherein 0 is the wavelength of the second light beam, and n0a and n0b are the refractive indices of the first and second retardation members, respectively, for the wavelength 0 .

19. The optical pickup of claim 17, wherein when the phase difference according to a wavelength variation of the second light beam from the wavelength 0 to a wavelength 1 light beam] is expressed as ((n1a -n1b) z(h)), wherein n1a and n1b are the refractive indices of the third and the fourth retardation members, respectively, for the wavelength 1,

and h is a distance from the optical axis, and z(h) is a height from a light receiving surface of the third retardation member or the fourth retardation member to a particular step of the third retardation member or the fourth retardation member at the distance h, and the phase difference is opposite to the aberration caused by the wavelength variation.

20. The optical pickup of claim 18, wherein when the phase difference according to a wavelength variation of the second light beam from the wavelength 0 to a wavelength 1 is expressed as ((n1a -n1b) z(h)), wherein n1a and n1b are the refractive indices of the third and the fourth retardation members, respectively, for the wavelength 1 , and h is a distance from the optical axis, and z(h) is a height from a light receiving surface of the third retardation member or the fourth retardation member to a particular step of the third retardation member or the fourth retardation member at the distance h, and the phase difference is opposite to the aberration caused by the wavelength variation.

21. The optical pickup of claim 12 wherein the first and the second retardation members are formed of an anisotropic material.

22. The optical pickup of claim 13, wherein the first and the second retardation members are formed of an anisotropic material.

23. The optical pickup of claim 17, wherein the third and the fourth retardation members are formed of an anisotropic material.

24. The optical pickup of claim 18, wherein the third and the fourth retardation members are formed of an anisotropic material.

25. The optical pickup of claim 21, wherein the first and the second retardation members comprise substantially equal refractive index for the second light beam as a second beam perpendicular to the first polarization of the first light beam.

26. The optical pickup of claim 22, wherein the first and the second retardation members comprise substantially equal refractive indices for the second light beam perpendicular to the first light beam.

27. The optical pickup of claim 23, wherein the third and the fourth retardation members comprise substantially equal refractive indices for the first light beam perpendicular to the second light beam.

28. The optical pickup of claim 24, wherein the third and the fourth retardation members comprise substantially equal refractive indices for the first light beam perpendicular to the second light beam.

29. The optical pickup of claim 11, wherein the first light beam is a blue light, and the recording medium comprises a higher density than a digital versatile disc (DVD) family media.

30. The optical pickup of claim 16, wherein the second light beam is a red light, and the low-density recording medium is a DVD family recording medium.

31. The optical pickup of claim 16, wherein the first light beam is a blue light, and the second light beam is a red light; and the high-density recording medium is a recording medium comprising a higher density than a digital versatile disc (DVD) family media, and the low-density recording medium is a DVD family recording medium.

32. The optical pickup of claim 29, wherein the first light beam comprises a wavelength of about 405 nm.

33. The optical pickup of claim 30, wherein the second light beam comprises a wavelength of about 650 nm.

34. The optical pickup of claim 31, wherein the first light beam comprises a wavelength of about 405 nm, and the second light beam comprises a wavelength of about 650 nm.

35. The optical pickup of claim 29, wherein the thickness of a substrate of the high-density recording medium is 0.6 mm or less.

36. The optical pickup of claim 31, wherein the thickness of a substrate of the high-density recording medium is 0.6 mm or less.

37. The optical pickup of claim 16, wherein the optical path changing unit is arranged on the optical path where the first light source and the second light source are perpendicular to each other and are aligned with the optical axis.

38. The optical pickup of claim 16, wherein the first and the second light sources are arranged close to each other.

39. The optical pickup of claim 16, wherein one of the first light source and the second light source is aligned with the optical axis, and the other light source is off the optical axis close to the light source aligned with the optical axis, and the first aberration correction element corrects for a field aberration with respect to the light beam emitted from the light source off the optical axis.

40. The optical pickup of claim 17, wherein one of the first light source and the second light source is aligned with the optical axis, and the other light source is off the optical axis close to the light source aligned with the optical axis, and the first aberration correction element or the second aberration correction element corrects for a field aberration with respect to the light beam emitted from the light source off the optical axis.

41. The optical pickup of claim 39, further comprising a hologram element on the optical path between the optical path changing unit and the photodetector, to correct a field aberration with respect to the light beam heading towards the photodetector through

the first aberration correction element after being emitted from the light source off the optical axis and reflected from a recording medium associated with the light source off the optical axis.

42. The optical pickup of claim 40, further comprising a hologram element on the optical path between the optical path changing unit and the photodetector, for correcting a field aberration with respect to the light beam heading towards the photodetector through the first and/or the second aberration correction elements after being emitted from the light source off the optical axis and reflected from a recording medium associated with the light source off the optical axis.

43. The optical pickup of claim 12, wherein the second retardation member of the first aberration correction element comprises a plurality of sections located at a center or at one side of the first retardation member, and the refractive indices of neighboring sections of the second retardation member are different for the first light beam.

44. The optical pickup of claim 17, wherein the second retardation member of the first aberration correction element comprises a plurality of sections located at a center or at one side of the first retardation member , and/or the fourth retardation member of the second aberration correction element comprises a plurality of sections located at a center or at one side of the third retardation member; and a refractive indices of neighboring sections of each of the second and/or the fourth retardation members are different for the first and/or the second light beams.

45. The optical pickup of claim 43, wherein the phase difference caused by the first aberration correction element according to a wavelength varied from the wavelength for which the objective lens is designed is expressed as (n1a-n1b(h)) d, wherein n1a is the refractive index of the first retardation member for a varied wavelength, n1b(h) is the refractive index of a section of the second retardation member for the varied wavelength, wherein the section is separated by a distance h from the optical axis, and d is a thickness of the second retardation member, and the phase difference is opposite to the aberration caused by the wavelength variation of the first light beam.

46. The optical pickup of claim 44, wherein the phase difference caused by the first or second aberration correction element according to a wavelength varied from the wavelength for which the objective lens is designed is expressed as $(n1a-n1b(h))\ d$, wherein $n1a$ is the refractive index of the first or third retardation member for the varied wavelength, $n1b(h)$ is the refractive index of a section of the second or fourth retardation member for the varied wavelength, wherein the section is separated by a distance h from the optical axis, and d is a thickness of the second or fourth retardation member, and the phase difference is opposite to the aberration caused by the wavelength variation of the first light beam, or the difference in wavelength between the first and the second light beams.

47. An optical pickup for a recording/reproduction system comprising a recording medium, the optical pickup comprising:

a light source emitting a polarized light beam comprising a wavelength suitable for the recording medium;

an objective lens focusing the polarized light beam to form a light spot on the recording medium;

an optical path changing unit arranged on an optical path between the light source and the objective lens, altering a traveling path of the polarized light beam;

a first retardation member;

a second retardation member combined with the first retardation member, wherein the first retardation member and the second retardation member comprise different refractive indices for the polarized light beam;

an aberration correction element arranged on the optical path between the optical path changing unit and the objective lens to correct chromatic aberration caused by a wavelength variation of the polarized light beam, wherein the aberration correction element comprises the first retardation member and the second retardation member; and

a photodetector receiving the polarized light beam through the objective lens and the optical path changing unit after the polarized light beam is reflected from the recording medium,

wherein a phase difference caused by the first and the second retardation members according to a wavelength variation of the first polarized light beam increases or decreases

with respect to distance from an optical axis between the first light source and the recording medium.